



LEGIONELLA PNEUMONIA 2005

No. 45, 2006

Notified cases

2005 saw 115 notified cases of legionella pneumonia: 73 males and 42 females. The median age was 60 (range 23-84). In 96 cases, the diagnosis was verified. The definition of verified legionella pneumonia is presented in EPI-NEWS 43/03. A predisposing factor was stated for 54 patients. A total of 19 patients died, [Table 1](#).

Table 1. Notified cases of legionella pneumonia, 2005

Category	To-tal	Veri-fied	Disp. fact.	Deaths
Travel assoc.	45	40	16	4
Nosocomial	12	11	8	5
Others, DK	58	45	30	10
Total	115	96	54	19

In 42 (37%) cases, a reminder was sent for a written notification. The distribution by county of verified cases acquired in Denmark is shown in [Table 2](#).

Table 2. No. and incidence per 10⁶ of notified verified cases of legionella pneumonia acquired in Denmark, 2005 (2004)

County	2005	(2004)	Incidence per 10 ⁶
Cph. Municip.	4	(5)	8.0
Frb. Municip.	0	(1)	-
Copenhagen	10	(8)	16.2
Frederiksborg	4	(3)	10.6
Roskilde	2	(3)	8.4
West Zealand	5	(3)	16.4
Storstrøm	2	(3)	7.6
Bornholm	1	(1)	23.1
Funen	4	(4)	8.4
South Jutland	4	(3)	15.8
Ribe	2	(3)	8.9
Vejle	3	(1)	8.4
Ringkøbing	3	(2)	10.9
Aarhus	6	(8)	9.1
Viborg	2	(2)	8.5
North Jutland	5	(5)	10.1
Unknown	1	(-)	-
Total	58 ¹⁾	(55) ²⁾	10.7

¹⁾ Including two travel associated cases acquired in Denmark

²⁾ Including four travel associated cases acquired in Denmark

Travel associated /imported cases

A total of 45 cases of legionella pneumonia were travel associated, [Table 3](#). Among these, 41 were notified to the European Working Group for Legionella Infections (EWGLI). Four cases were not notified to EWGLI due to insufficient travel in

Table 3. Travel associated cases of legionella pneumonia, by country of infection, 2005

Country of infection	No. of cases
Italy	12
Turkey	12
Spain	6
France	3
Greece	3
Denmark	2
Rest of Europe	3
Other countries	4
Total	45

formation, stays at private addresses in connection with the journey, or uncertain diagnosis.

The most commonly reported destinations were Turkey and Italy. Together with Spain, these countries accounted for 67% of all cases. Three outbreaks were observed, in which several Danes fell ill after staying at the same hotel. Thus, five and two Danish cases of legionella pneumonia were related to different Turkish hotels, and three Danish cases were related to the same Italian hotel. Another four Danish cases were related to different hotels abroad which were also related to at least one additional Non-Danish case. Two travel associated cases acquired in Denmark were related to a rented holiday cottage and a camping site, respectively. In two cases, water samples at two hotels abroad displayed *L. pneumophila* serogroup 1 isolates with the DNA types found in the Danish patients.

Nosocomial cases

There were 12 notified cases of nosocomial legionella pneumonia, distributed over eight hospitals. In ten cases the diagnosis was verified by culture, including nine cases of *L. pneumophila* and one of *L. micdadei*. Five of the notified nosocomial cases died. At a hospital ward, three cases were diagnosed. At this hospital and at another two, there was a correlation between the DNA type of legionella isolated from patients and from water samples.

Laboratory diagnosed cases

Statens Serum Institut has knowledge of 104 laboratory diagnosed cases of legionella pneumonia in 2005, including 99 verified cases and five cases which were only detected by legionella PCR for *L. pneumophila*. For three of these cases, notification was not received. Legionella

was isolated by culture from 62 patients. The distribution of the isolates was: 35 *L. pneumophila* serogroup (sg) 1 (23 Pontiac and 12 non-Pontiac), one sg 2, fifteen sg 3, four sg 6, two sg 10, one sg 15, one isolate was not received for serogroup determination and three *L. micdadei*. Among the mentioned *L. pneumophila* serogroups and subgroups, sg 1 subgroup Pontiac is found most infrequently in environmental samples, but most frequently isolated from patients. As in previous years, *L. pneumophila* sg 3 was the second-most frequent cause of culture confirmed legionella pneumonia constituting about 20 % in the last three years. The non-Pontiac subgroup of serogroup 1 is common in environmental samples; it is at least as frequent as sg 3 and causes approximately as many cases. Overall, it is assumed that the non-Pontiac subgroup of sg 1 and sg 3 are equally virulent, but less virulent than sg 1, subgroup Pontiac.

Mortality

When notification is made punctually, information on disease consequences, including deaths, will not always be available. Mortality following legionella pneumonia may thus have been underestimated in previous reports. Mortality information from the Danish Civil Registration System for all notified cases of legionella pneumonia, defined as deaths within one month after symptom onset, revealed eight deaths in addition to the eleven notified deaths in 2005, [Table 1](#). On inclusion of these deaths, the overall mortality ratio reached 17 % in 2005, equalling the 2004 level.

Commentary

The increase in the number of legionella pneumonia in 2005 compared with the 98 cases in 2004 and the 90 cases in 2003 is primarily due to an increase in the number of travel associated cases, among which four deaths were observed in 2005. As in previous years, travel associated legionella pneumonia was related to Turkey, Italy and Spain in particular. It is essential that all cases be notified promptly, so that local health authorities can be informed and may assess the risk and investigate further where pertinent, EPI-NEWS 18/05. (S. Uldum, DBMP, T. Krause, Department of Epidemiology)

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Individually notifiable diseases

Number of notifications received in the Department of Epidemiology, SSI (2006 figures are preliminary)

Table 1	Week 44 2006	Cum. 2006 ¹⁾	Cum. 2005 ¹⁾
AIDS	0	38	51
Anthrax	0	0	0
Botulism	0	0	0
Cholera	0	0	0
Creutzfeldt-Jakob	0	22	2
Diphtheria	0	0	0
Food-borne diseases	8	479	485
of these, infected abroad	0	117	119
Gonorrhoea	2	360	428
Haemorrhagic fever	0	0	0
Hepatitis A	1	35	58
of these, infected abroad	1	18	21
Hepatitis B (acute)	0	15	31
Hepatitis B (chronic)	1	268	124
Hepatitis C (acute)	0	7	1
Hepatitis C (chronic)	2	407	268
HIV	0	206	224
Legionella pneumonia	0	111	100
of these, infected abroad	0	29	42
Leprosy	0	0	0
Leptospirosis	0	8	10
Measles	0	27	2
Meningococcal disease	0	56	82
of these, group B	0	26	38
of these, group C	0	11	22
of these, unspec. + other	0	19	20
Mumps	1	17	7
Neuroborreliosis	1	69	75
Ornithosis	0	10	18
Pertussis (children < 2 years)	1	39	135
Plague	0	0	0
Polio	0	0	0
Purulent meningitis			
Haemophilus influenzae	0	2	2
Listeria monocytogenes	0	7	2
Streptococcus pneumoniae	0	67	100
Other aethiology	0	7	16
Unknown aethiology	0	16	17
Under registration	4	31	-
Rabies	0	0	0
Rubella (congenital)	0	0	0
Rubella (during pregnancy)	0	0	0
Shigellosis	1	53	91
of these, infected abroad	0	43	73
Syphilis	0	55	110
Tetanus	0	2	2
Tuberculosis	5	337	364
Typhoid/paratyphoid fever	0	25	31
of these, infected abroad	0	24	29
Typhus exanthematicus	0	0	1
VTEC/HUS	3	121	134
of these, infected abroad	0	42	46

¹⁾ Cumulative number 2006 and in corresponding period 2005

Selected laboratory diagnosed infections

Number of specimens, isolates, and/or notifications received in SSI laboratories

Table 2	Week 44 2006	Cum. 2006 ²⁾	Cum. 2005 ²⁾
Bordetella pertussis (all ages)	7	182	432
Gonococci	12	364	380
of these, females	1	65	39
of these, males	11	299	341
Listeria monocytogenes	1	44	32
Mycoplasma pneumoniae			
Resp. specimens ³⁾	15	378	824
Serum specimens ⁴⁾	8	315	668
Streptococci ⁵⁾			
Group A streptococci	1	122	90
Group B streptococci	3	83	70
Group C streptococci	0	19	22
Group G streptococci	6	127	102
S. pneumoniae	16	807	930

Table 3	Week 42 2006	Cum. 2006 ²⁾	Cum. 2005 ²⁾
Pathogenic int. bacteria ⁶⁾			
Campylobacter	42	2553	3139
S. Enteritidis	9	495	549
S. Typhimurium	7	333	459
Other zoon. salmonella	17	586	480
Yersinia enterocolitica	5	156	202
Verocytotoxin- producing E. coli	1	122	128
Enteropathogenic E. coli	3	246	230
Enterotoxigenic E. coli	2	203	313

²⁾ Cumulative number 2006 and in corresponding period 2005

³⁾ Resp. specimens with positive PCR

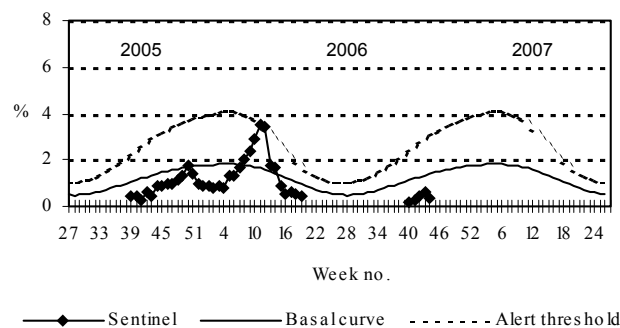
⁴⁾ Serum specimens with pos. complement fixation test

⁵⁾ Isolated in blood or spinal fluid

⁶⁾ See also www.germ.dk

Sentinel surveillance of the influenza activity

Weekly percentage of consultations, 2005/2006/2007



Sentinel: Influenza consultations
(as percentage of total consultations)

Basal curve: Expected frequency of consultations
under non-epidemic conditions

Alert threshold: Possible incipient epidemic